Implementing a Collaborative Process to Improve the Consistency, Transparency, and Accessibility of the Nonpoint Source Emission Estimates in the 2008 National Emissions Inventory

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Presentation Organization

1. Background on Nonpoint Emissions Development Process
2. Objectives of New Process
3. Methods to Achieve Objectives
    a. Calculation Workbooks
    b. Documentation Files
    c. Nonpoint Source Website
4. Conclusions

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Background

- Historically, EPA has prepared a default nonpoint emissions inventory to assist state and local agencies in developing their emission inventories
- Emission estimates included in the default inventory serve as a baseline for states to evaluate source category emissions
- Where state or local agencies have more detailed or better information, they are encouraged to replace the EPA's default emission estimates
- One concern with the nonpoint inventory development process has been the lack of consistency and transparency in emission estimation methodologies between state and local agencies

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How Has the Process Changed for the 2008 NEI?

- In 2008, Mark Janssen of LADCO identified improving area source emission inventories for the eastern states as a top priority project
- Under the ERTAC umbrella, emission inventory experts from many eastern U.S. state agencies formed a technical committee to focus on improvement of area source inventories
- The committee asked EPA to join in the improvement effort and EPA subsequently agreed to facilitate the conference calls and to provide contractor support in developing county-level emission estimates
- The process instituted by ERTAC is a novel approach because it seeks to improve consistency and transparency through stakeholder involvement

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EPA Public Involvement Policy

- To achieve EPA's mission to protect human health and the environment, EPA needs to integrate "the knowledge and opinions of others into its decision-making process. Effective public involvement can both improve the content of the Agency's decisions and enhance the deliberative process."

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Who is Involved in the New Process?

States
Delaware
Georgia
Illinois
Maine
Maryland
Massachusetts
Michigan
New Jersey
New York
North Carolina
Ohio
Pennsylvania
Rhode Island
Virginia
Washington, D.C.
West Virginia
Wisconsin
RPOs
LADCO
MARAMA

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Objectives of the New Process

1. Develop consistent sets of activity data, calculation methods, and emission factors for use by S/L/T agencies when calculating emissions
2. Improve transparency by developing calculation workbooks and documentation for each source category that clearly display how EPA's default nonpoint emissions are calculated
3. Provide ready access to EPA's default calculation workbooks and documentation
4. Track all changes/improvements made to the default nonpoint inventory

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Nonpoint Categories

Source Category
Agriculture Production - Livestock
Asphalt Paving
Aviation Gasoline Distribution
Commercial Cooking
Construction Dust
Commercial/Institutional Fuel Combustion
Fertilizer Application
Gasoline Distribution
Industrial Fuel Combustion
Open Burning
Paved and Unpaved Roads
Publicly Owned Treatment Works (POTW)
Residential Heating
Solvent Usage - Surface Coatings
Solvent Usage - Other

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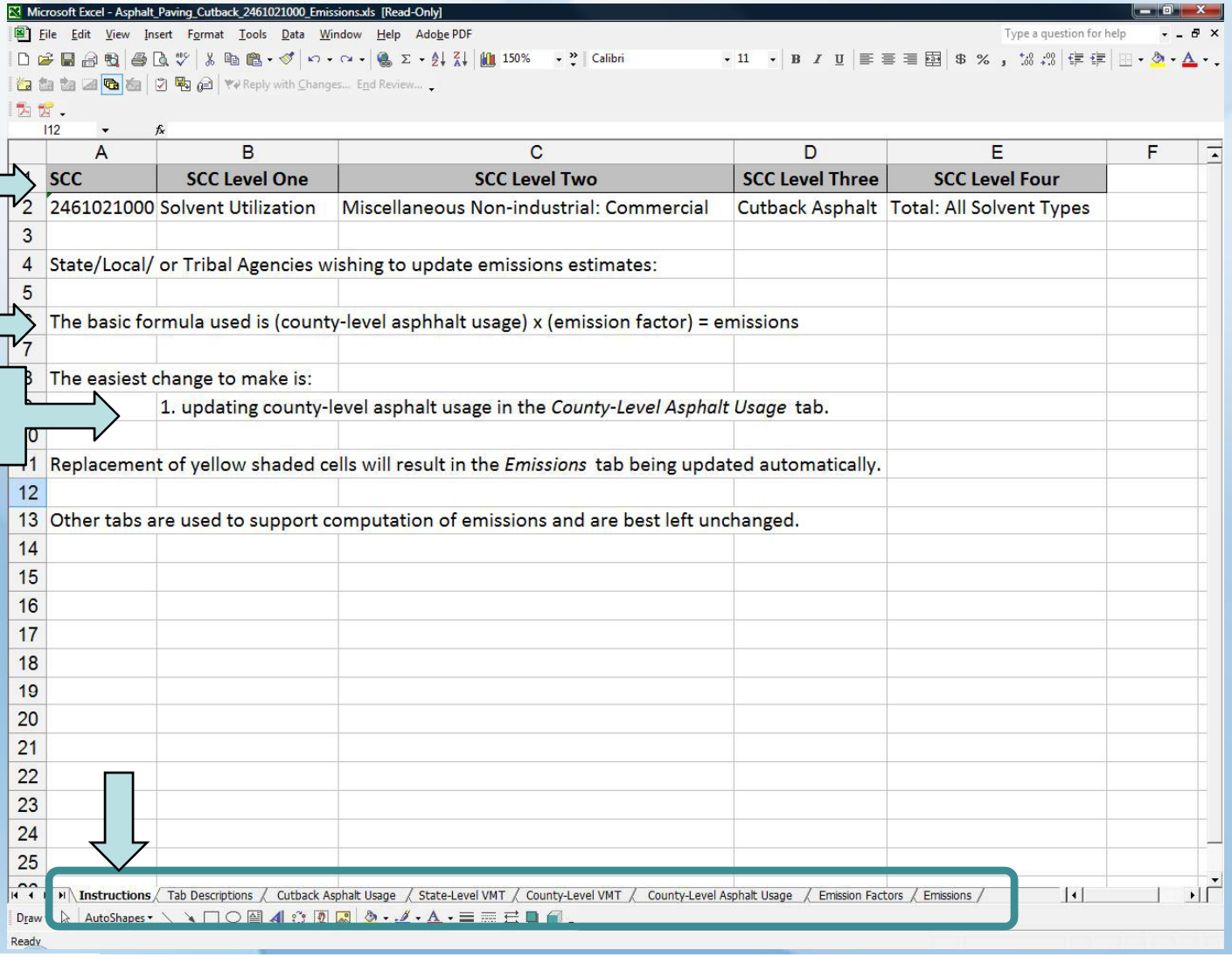
Calculation Workbook - Instructions

SCC

Formula

Update Guidance



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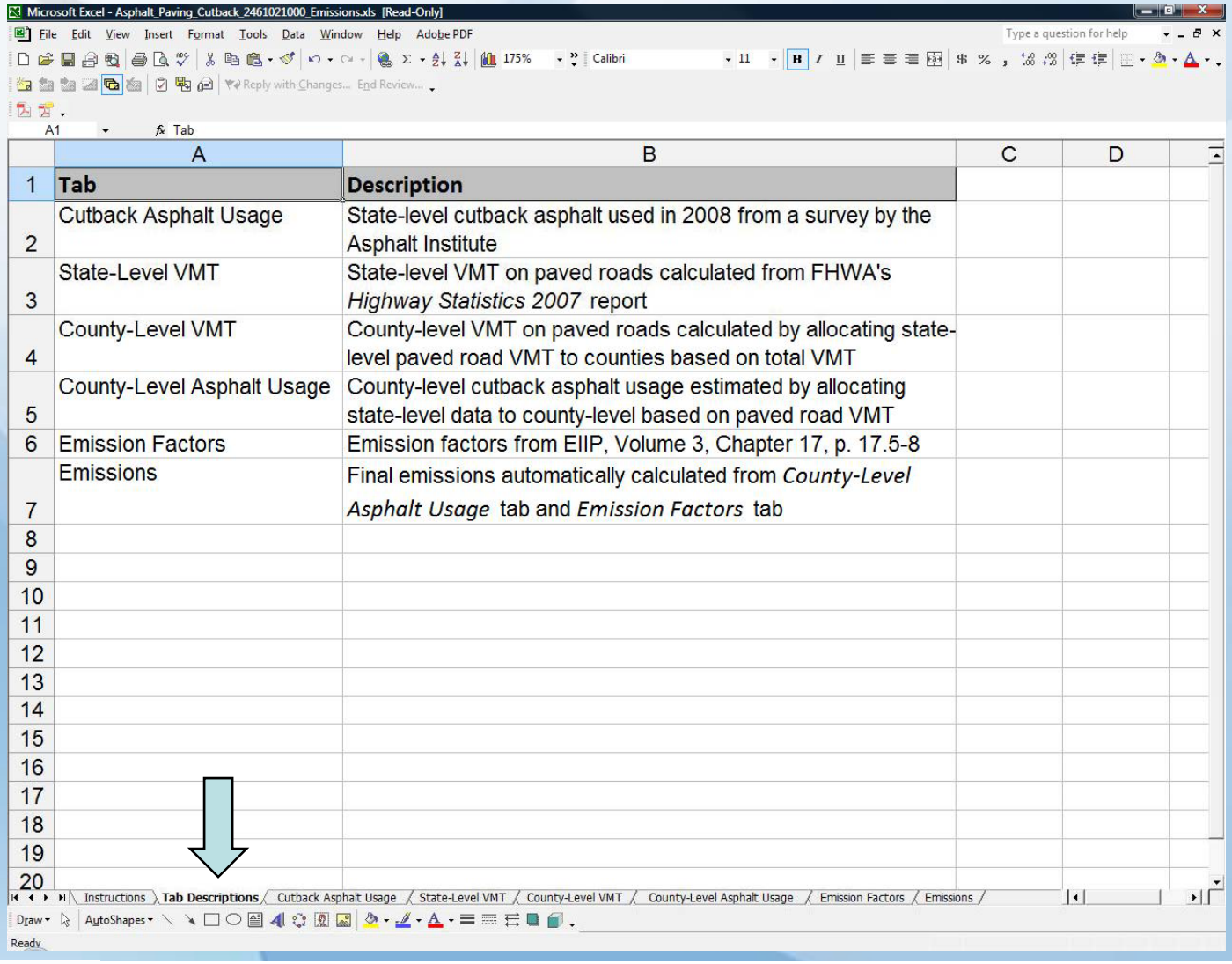
Calculation Workbook – Tab Descriptions



	A	B	C	D
1	**Tab**	**Description**		
2	Cutback Asphalt Usage	State-level cutback asphalt used in 2008 from a survey by the Asphalt Institute		
3	State-Level VMT	State-level VMT on paved roads calculated from FHWA's *Highway Statistics 2007* report		
4	County-Level VMT	County-level VMT on paved roads calculated by allocating state-level paved road VMT to counties based on total VMT		
5	County-Level Asphalt Usage	County-level cutback asphalt usage estimated by allocating state-level data to county-level based on paved road VMT		
6	Emission Factors	Emission factors from EIIP, Volume 3, Chapter 17, p. 17.5-8		
7	Emissions	Final emissions automatically calculated from *County-Level Asphalt Usage* tab and *Emission Factors* tab		
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Calculation Workbook - Activity

Data Source

Activity

Microsoft Excel - Asphalt_Paving_Cutback_2461021000_Emissions.xls [Read-Only]

File Edit View Insert Format Tools Data Window Help Adobe PDF

N17

Cutback asphalt usage from "2008 Asp … hased from Asphalt Institute, www.asphaltinstitute.org.

FIPS State Code	State Name	Postal State Code	Cutback Asphalt Usage	Unit
01	Alabama	AL	1,728	TONS
02	Alaska	AK	0	TONS
04	Arizona	AZ	7,917	TONS
05	Arkansas	AR	1,442	TONS
06	California	CA	30,657	TONS
08	Colorado	CO	331	TONS
09	Connecticut	CT	0	TONS
10	Delaware	DE	0	TONS
11	District of Columbia	DC	0	TONS
12	Florida	FL	809	TONS
13	Georgia	GA	1,136	TONS
15	Hawaii	HI	0	TONS
16	Idaho	ID	2,880	TONS
17	Illinois	IL	18,889	TONS
18	Indiana	IN	290	TONS
19	Iowa	IA	4,874	TONS
20	Kansas	KS	3,641	TONS
21	Kentucky	KY	456	TONS
22	Louisiana	LA	175	TONS

Instructions | Tab Descriptions | Cutback Asphalt Usage | State-Level VMT | County-Level VMT | County-Level Asphalt Usage | Emission Factors | Emissions

Ready

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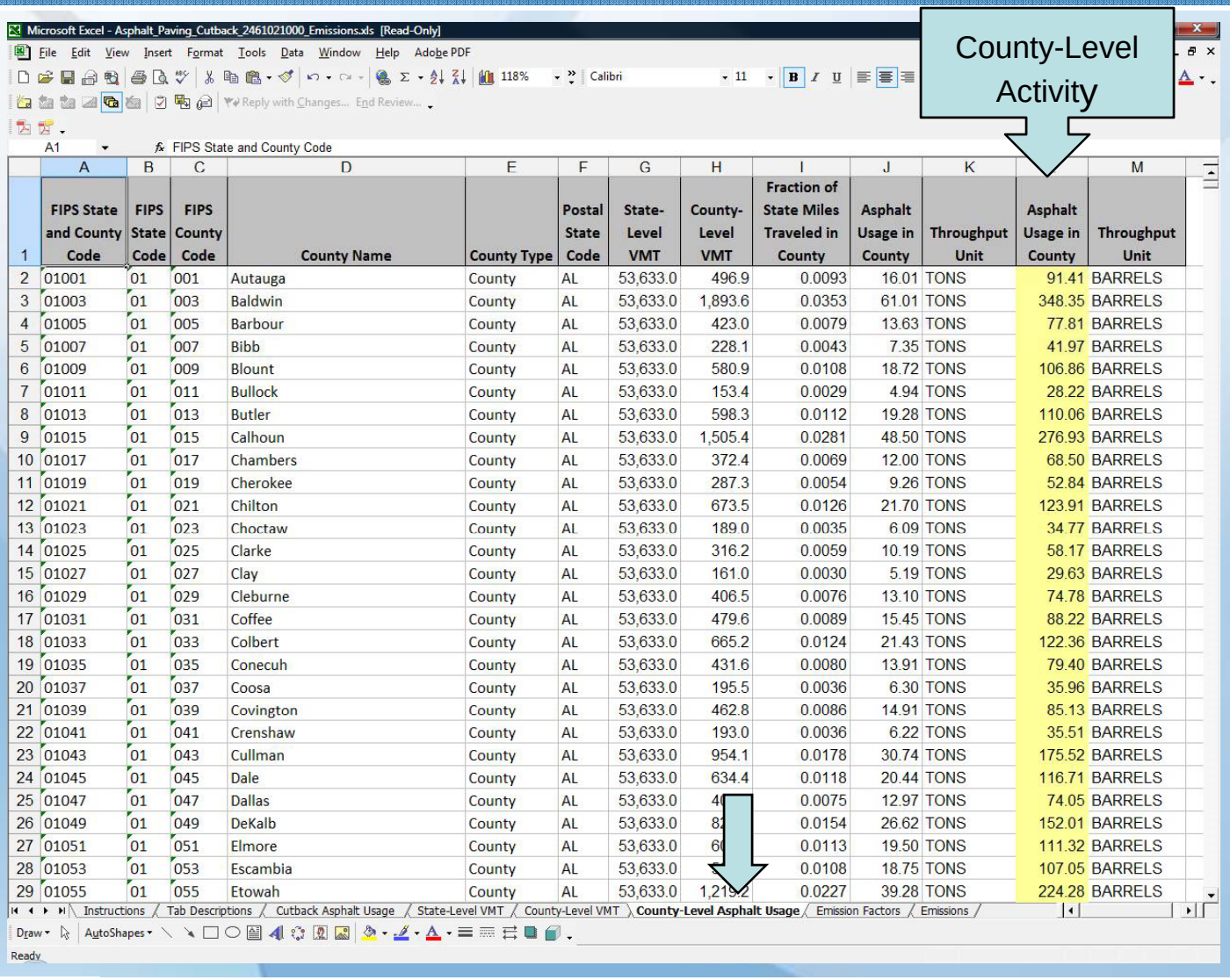
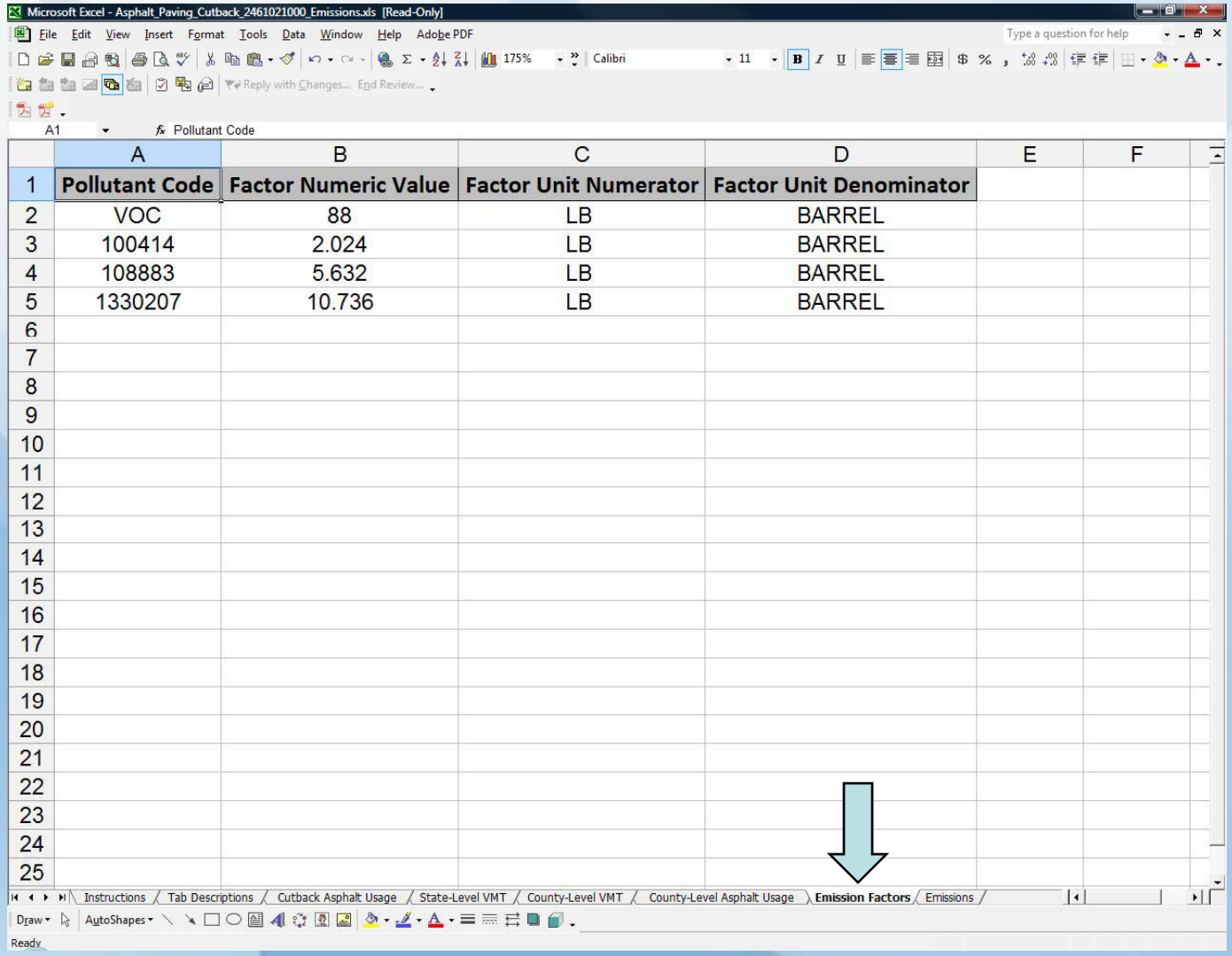
Calculation Workbook – County Allocation



County-Level Activity

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	FIPS State and County Code	FIPS State Code	FIPS County Code	County Name	County Type	Postal State Code	State-Level VMT	County-Level VMT	Fraction of State Miles Traveled in County	Asphalt Usage in County	Throughput Unit	Asphalt Usage in County	Throughput Unit
2	01001	01	001	Autauga	County	AL	53,633.0	496.9	0.0093	16.01	TONS	91.41	BARRELS
3	01003	01	003	Baldwin	County	AL	53,633.0	1,893.6	0.0353	61.01	TONS	348.35	BARRELS
4	01005	01	005	Barbour	County	AL	53,633.0	423.0	0.0079	13.63	TONS	77.81	BARRELS
5	01007	01	007	Bibb	County	AL	53,633.0	228.1	0.0043	7.35	TONS	41.97	BARRELS
6	01009	01	009	Blount	County	AL	53,633.0	580.9	0.0108	18.72	TONS	106.86	BARRELS
7	01011	01	011	Bullock	County	AL	53,633.0	153.4	0.0029	4.94	TONS	28.22	BARRELS
8	01013	01	013	Butler	County	AL	53,633.0	598.3	0.0112	19.28	TONS	110.06	BARRELS
9	01015	01	015	Calhoun	County	AL	53,633.0	1,505.4	0.0281	48.50	TONS	276.93	BARRELS
10	01017	01	017	Chambers	County	AL	53,633.0	372.4	0.0069	12.00	TONS	68.50	BARRELS
11	01019	01	019	Cherokee	County	AL	53,633.0	287.3	0.0054	9.26	TONS	52.84	BARRELS
12	01021	01	021	Chilton	County	AL	53,633.0	673.5	0.0126	21.70	TONS	123.91	BARRELS
13	01023	01	023	Choctaw	County	AL	53,633.0	189.0	0.0035	6.09	TONS	34.77	BARRELS
14	01025	01	025	Clarke	County	AL	53,633.0	316.2	0.0059	10.19	TONS	58.17	BARRELS
15	01027	01	027	Clay	County	AL	53,633.0	161.0	0.0030	5.19	TONS	29.63	BARRELS
16	01029	01	029	Cleburne	County	AL	53,633.0	406.5	0.0076	13.10	TONS	74.78	BARRELS
17	01031	01	031	Coffee	County	AL	53,633.0	479.6	0.0089	15.45	TONS	88.22	BARRELS
18	01033	01	033	Colbert	County	AL	53,633.0	665.2	0.0124	21.43	TONS	122.36	BARRELS
19	01035	01	035	Conecuh	County	AL	53,633.0	431.6	0.0080	13.91	TONS	79.40	BARRELS
20	01037	01	037	Coosa	County	AL	53,633.0	195.5	0.0036	6.30	TONS	35.96	BARRELS
21	01039	01	039	Covington	County	AL	53,633.0	462.8	0.0086	14.91	TONS	85.13	BARRELS
22	01041	01	041	Crenshaw	County	AL	53,633.0	193.0	0.0036	6.22	TONS	35.51	BARRELS
23	01043	01	043	Cullman	County	AL	53,633.0	954.1	0.0178	30.74	TONS	175.52	BARRELS
24	01045	01	045	Dale	County	AL	53,633.0	634.4	0.0118	20.44	TONS	116.71	BARRELS
25	01047	01	047	Dallas	County	AL	53,633.0	4	0.0075	12.97	TONS	74.05	BARRELS
26	01049	01	049	DeKalb	County	AL	53,633.0	8	0.0154	26.62	TONS	152.01	BARRELS
27	01051	01	051	Elmore	County	AL	53,633.0	6	0.0113	19.50	TONS	111.32	BARRELS
28	01053	01	053	Escambia	County	AL	53,633.0		0.0108	18.75	TONS	107.05	BARRELS
29	01055	01	055	Etowah	County	AL	53,633.0	1,21	0.0227	39.28	TONS	224.28	BARRELS

Calculation Workbook – Emission Factors



	A	B	C	D	E	F
1	**Pollutant Code**	**Factor Numeric Value**	**Factor Unit Numerator**	**Factor Unit Denominator**		
2	VOC	88	LB	BARREL		
3	100414	2.024	LB	BARREL		
4	108883	5.632	LB	BARREL		
5	1330207	10.736	LB	BARREL		
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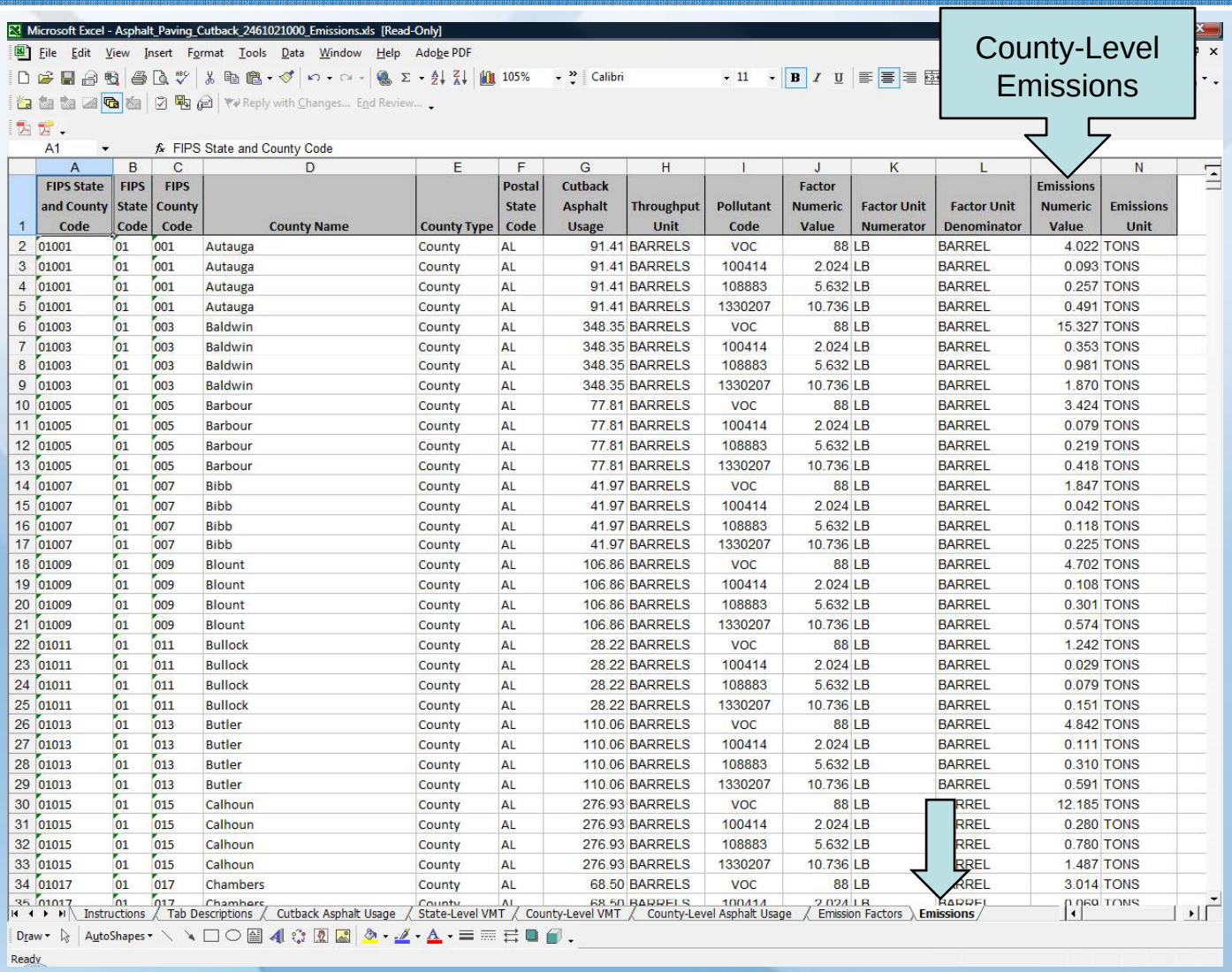
Calculation Workbook - Emissions



	A	B	C	D	E	F	G	H	I	J	K	L		N
1	FIPS State and County Code	FIPS State Code	FIPS County Code	County Name	County Type	Postal State Code	Cutback Asphalt Usage	Throughput Unit	Pollutant Code	Factor Numeric Value	Factor Unit Numerator	Factor Unit Denominator	Emissions Numeric Value	Emissions Unit
2	01001	01	001	Autauga	County	AL	91.41	BARRELS	VOC	88	LB	BARREL	4.022	TONS
3	01001	01	001	Autauga	County	AL	91.41	BARRELS	100414	2.024	LB	BARREL	0.093	TONS
4	01001	01	001	Autauga	County	AL	91.41	BARRELS	108883	5.632	LB	BARREL	0.257	TONS
5	01001	01	001	Autauga	County	AL	91.41	BARRELS	1330207	10.736	LB	BARREL	0.491	TONS
6	01003	01	003	Baldwin	County	AL	348.35	BARRELS	VOC	88	LB	BARREL	15.327	TONS
7	01003	01	003	Baldwin	County	AL	348.35	BARRELS	100414	2.024	LB	BARREL	0.353	TONS
8	01003	01	003	Baldwin	County	AL	348.35	BARRELS	108883	5.632	LB	BARREL	0.981	TONS
9	01003	01	003	Baldwin	County	AL	348.35	BARRELS	1330207	10.736	LB	BARREL	1.870	TONS
10	01005	01	005	Barbour	County	AL	77.81	BARRELS	VOC	88	LB	BARREL	3.424	TONS
11	01005	01	005	Barbour	County	AL	77.81	BARRELS	100414	2.024	LB	BARREL	0.079	TONS
12	01005	01	005	Barbour	County	AL	77.81	BARRELS	108883	5.632	LB	BARREL	0.219	TONS
13	01005	01	005	Barbour	County	AL	77.81	BARRELS	1330207	10.736	LB	BARREL	0.418	TONS
14	01007	01	007	Bibb	County	AL	41.97	BARRELS	VOC	88	LB	BARREL	1.847	TONS
15	01007	01	007	Bibb	County	AL	41.97	BARRELS	100414	2.024	LB	BARREL	0.042	TONS
16	01007	01	007	Bibb	County	AL	41.97	BARRELS	108883	5.632	LB	BARREL	0.118	TONS
17	01007	01	007	Bibb	County	AL	41.97	BARRELS	1330207	10.736	LB	BARREL	0.225	TONS
18	01009	01	009	Blount	County	AL	106.86	BARRELS	VOC	88	LB	BARREL	4.702	TONS
19	01009	01	009	Blount	County	AL	106.86	BARRELS	100414	2.024	LB	BARREL	0.108	TONS
20	01009	01	009	Blount	County	AL	106.86	BARRELS	108883	5.632	LB	BARREL	0.301	TONS
21	01009	01	009	Blount	County	AL	106.86	BARRELS	1330207	10.736	LB	BARREL	0.574	TONS
22	01011	01	011	Bullock	County	AL	28.22	BARRELS	VOC	88	LB	BARREL	1.242	TONS
23	01011	01	011	Bullock	County	AL	28.22	BARRELS	100414	2.024	LB	BARREL	0.029	TONS
24	01011	01	011	Bullock	County	AL	28.22	BARRELS	108883	5.632	LB	BARREL	0.079	TONS
25	01011	01	011	Bullock	County	AL	28.22	BARRELS	1330207	10.736	LB	BARREL	0.151	TONS
26	01013	01	013	Butler	County	AL	110.06	BARRELS	VOC	88	LB	BARREL	4.842	TONS
27	01013	01	013	Butler	County	AL	110.06	BARRELS	100414	2.024	LB	BARREL	0.111	TONS
28	01013	01	013	Butler	County	AL	110.06	BARRELS	108883	5.632	LB	BARREL	0.310	TONS
29	01013	01	013	Butler	County	AL	110.06	BARRELS	1330207	10.736	LB	BARREL	0.591	TONS
30	01015	01	015	Calhoun	County	AL	276.93	BARRELS	VOC	88	LB	RREL	12.185	TONS
31	01015	01	015	Calhoun	County	AL	276.93	BARRELS	100414	2.024	LB	RREL	0.280	TONS
32	01015	01	015	Calhoun	County	AL	276.93	BARRELS	108883	5.632	LB	RREL	0.780	TONS
33	01015	01	015	Calhoun	County	AL	276.93	BARRELS	1330207	10.736	LB	REL	1.487	TONS
34	01017	01	017	Chambers	County	AL	68.50	BARRELS	VOC	88	LB	RREL	3.014	TONS
35	01017	01	017	Chambers	County	AL	68.50	BARRELS	100414	2.024	LB	BARREL	0.069	TONS

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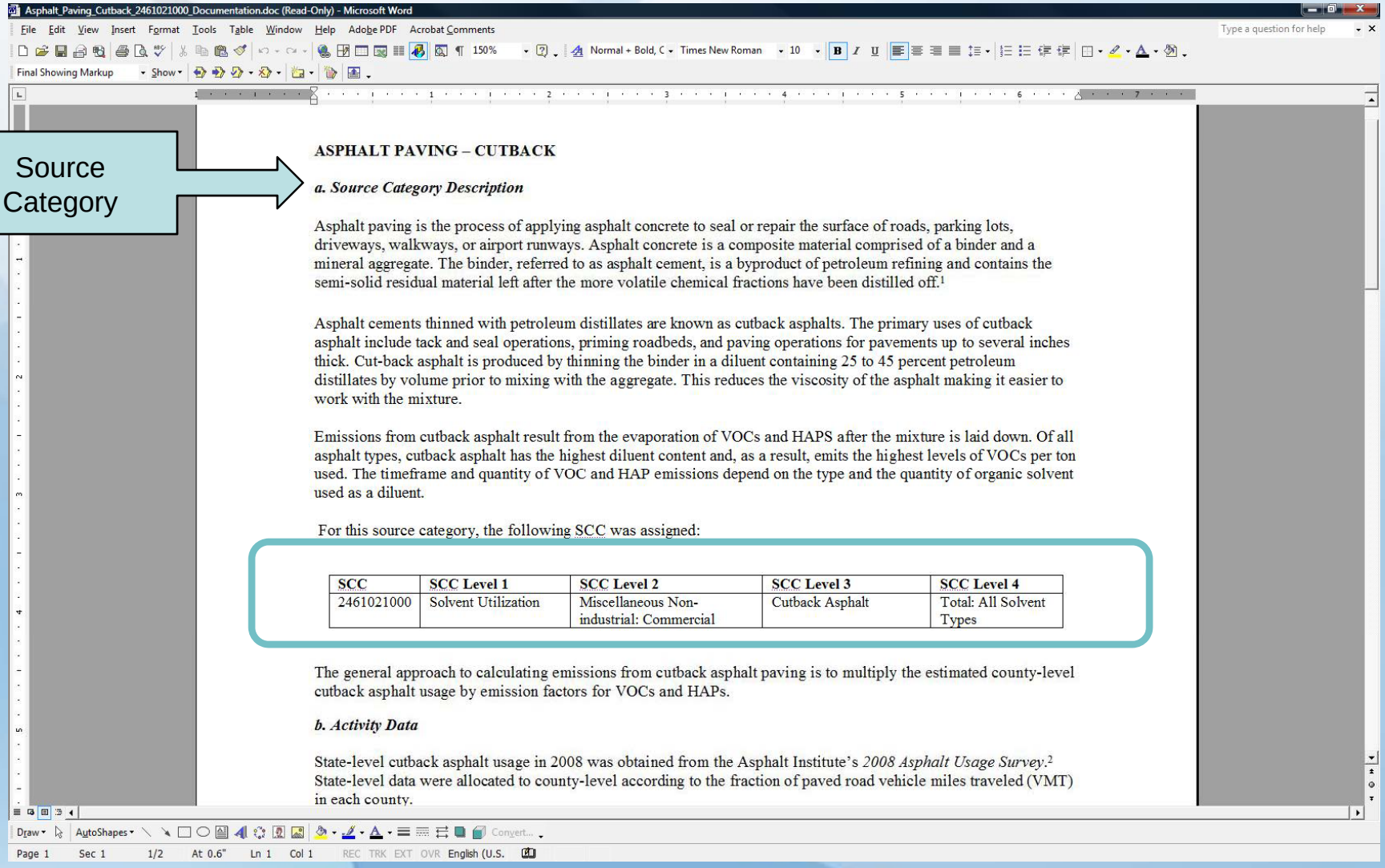
Documentation – Category Description

Source Category


Asphalt_Paving_Cutback_2461021000_Documentation.doc (Read-Only) - Microsoft Word

ASPHALT PAVING – CUTBACK

a. Source Category Description

Asphalt paving is the process of applying asphalt concrete to seal or repair the surface of roads, parking lots, driveways, walkways, or airport runways. Asphalt concrete is a composite material comprised of a binder and a mineral aggregate. The binder, referred to as asphalt cement, is a byproduct of petroleum refining and contains the semi-solid residual material left after the more volatile chemical fractions have been distilled off.[1]

Asphalt cements thinned with petroleum distillates are known as cutback asphalts. The primary uses of cutback asphalt include tack and seal operations, priming roadbeds, and paving operations for pavements up to several inches thick. Cut-back asphalt is produced by thinning the binder in a diluent containing 25 to 45 percent petroleum distillates by volume prior to mixing with the aggregate. This reduces the viscosity of the asphalt making it easier to work with the mixture.

Emissions from cutback asphalt result from the evaporation of VOCs and HAPS after the mixture is laid down. Of all asphalt types, cutback asphalt has the highest diluent content and, as a result, emits the highest levels of VOCs per ton used. The timeframe and quantity of VOC and HAP emissions depend on the type and the quantity of organic solvent used as a diluent.

For this source category, the following SCC was assigned:

SCC	SCC Level 1	SCC Level 2	SCC Level 3	SCC Level 4
2461021000	Solvent Utilization	Miscellaneous Non-industrial: Commercial	Cutback Asphalt	Total: All Solvent Types

The general approach to calculating emissions from cutback asphalt paving is to multiply the estimated county-level cutback asphalt usage by emission factors for VOCs and HAPs.

b. Activity Data

State-level cutback asphalt usage in 2008 was obtained from the Asphalt Institute's *2008 Asphalt Usage Survey*.[2] State-level data were allocated to county-level according to the fraction of paved road vehicle miles traveled (VMT) in each county.

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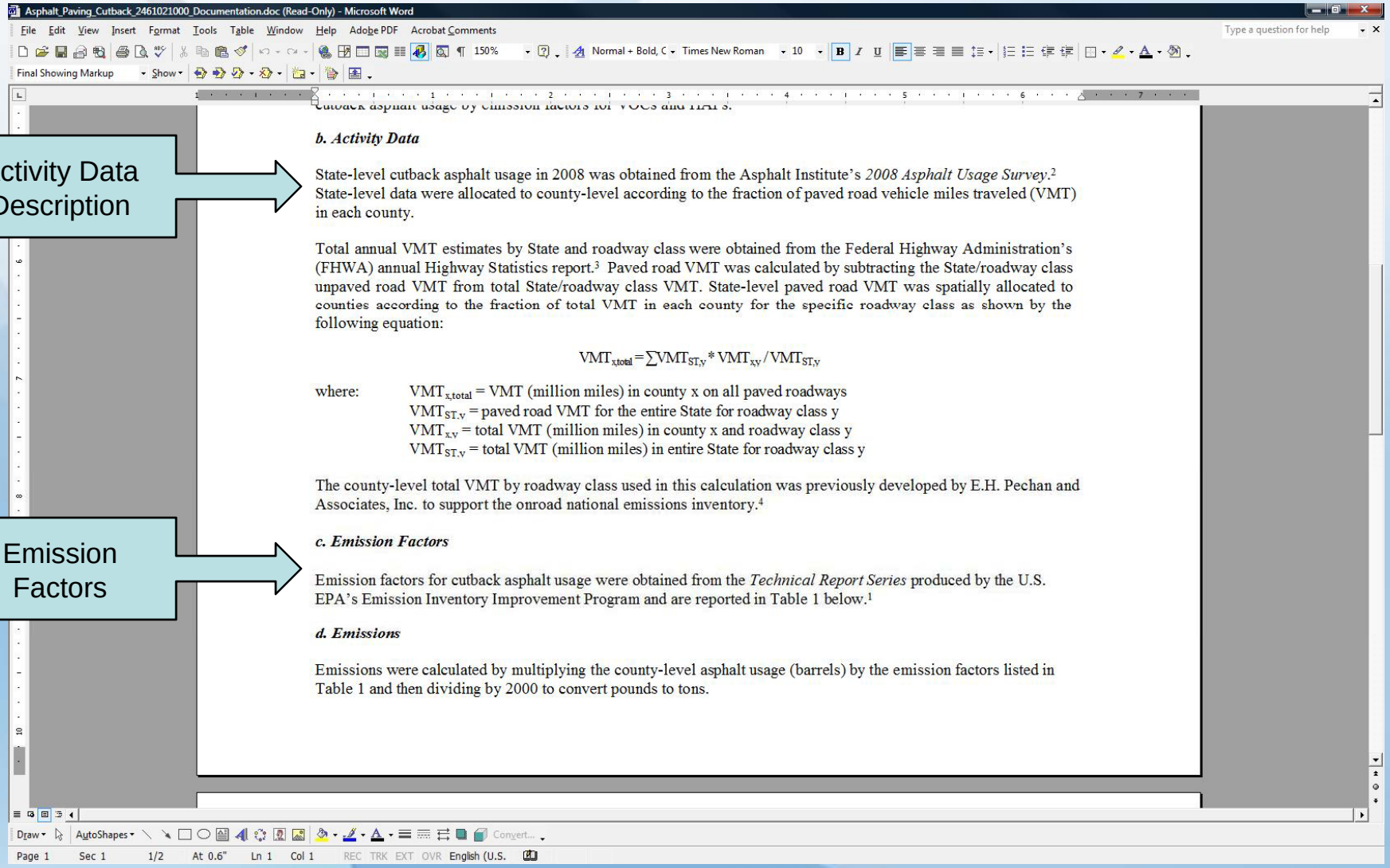
Documentation – Activity Data & EFs

Activity Data Description

Emission Factors



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b. Activity Data

State-level cutback asphalt usage in 2008 was obtained from the Asphalt Institute's *2008 Asphalt Usage Survey*.[2] State-level data were allocated to county-level according to the fraction of paved road vehicle miles traveled (VMT) in each county.

Total annual VMT estimates by State and roadway class were obtained from the Federal Highway Administration's (FHWA) annual Highway Statistics report.[3] Paved road VMT was calculated by subtracting the State/roadway class unpaved road VMT from total State/roadway class VMT. State-level paved road VMT was spatially allocated to counties according to the fraction of total VMT in each county for the specific roadway class as shown by the following equation:

$$VMT_{x,total} = \sum VMT_{ST,y} * VMT_{x,y} / VMT_{ST,y}$$

where: $VMT_{x,total}$ = VMT (million miles) in county x on all paved roadways
$VMT_{ST,y}$ = paved road VMT for the entire State for roadway class y
$VMT_{x,y}$ = total VMT (million miles) in county x and roadway class y
$VMT_{ST,y}$ = total VMT (million miles) in entire State for roadway class y

The county-level total VMT by roadway class used in this calculation was previously developed by E.H. Pechan and Associates, Inc. to support the onroad national emissions inventory.[4]

c. Emission Factors

Emission factors for cutback asphalt usage were obtained from the *Technical Report Series* produced by the U.S. EPA's Emission Inventory Improvement Program and are reported in Table 1 below.[1]

d. Emissions

Emissions were calculated by multiplying the county-level asphalt usage (barrels) by the emission factors listed in Table 1 and then dividing by 2000 to convert pounds to tons.

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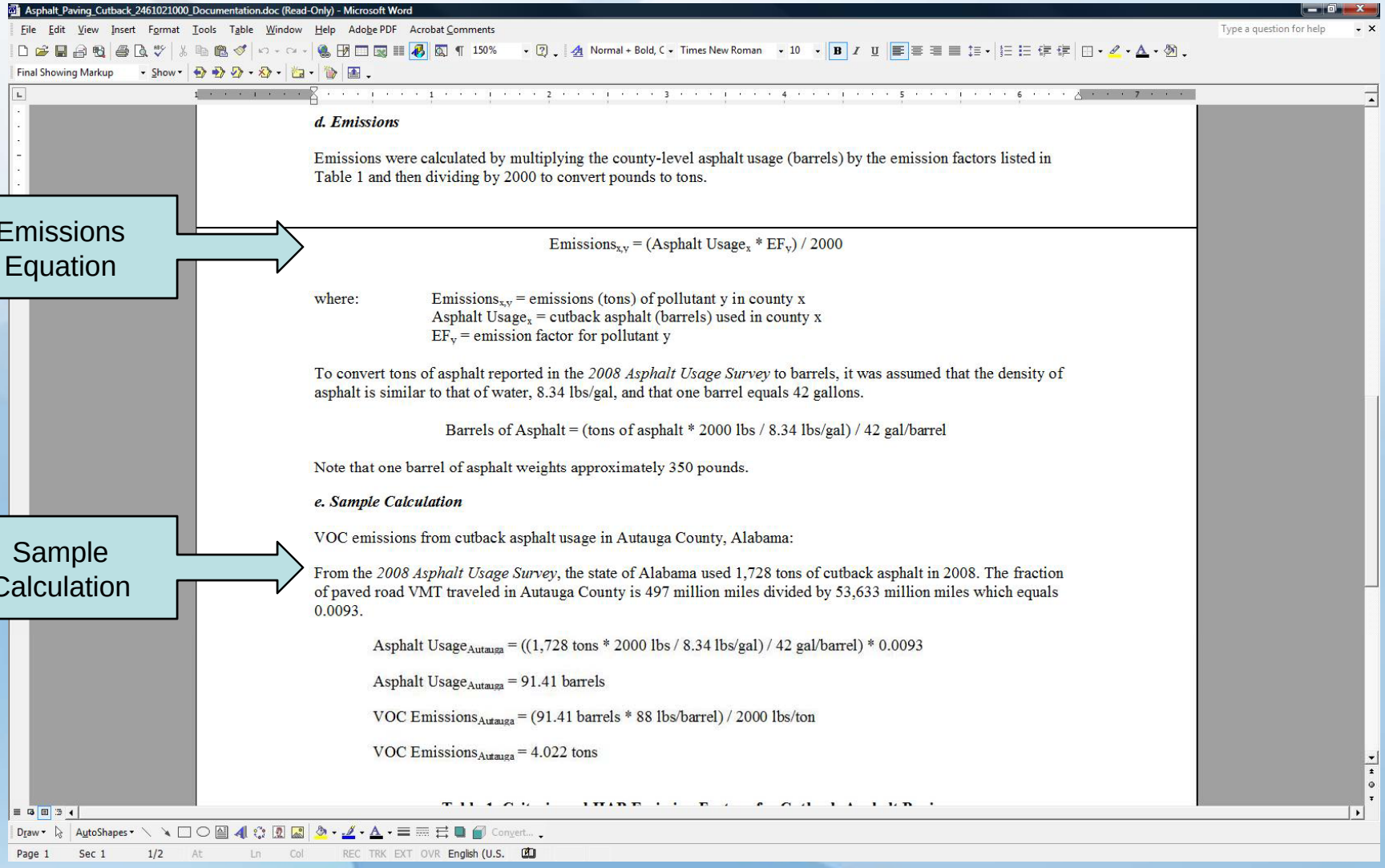
Documentation – Emissions & Sample Calculation

Emissions Equation

Sample Calculation



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d. Emissions

Emissions were calculated by multiplying the county-level asphalt usage (barrels) by the emission factors listed in Table 1 and then dividing by 2000 to convert pounds to tons.

$$Emissions_{x,y} = (Asphalt\ Usage_x * EF_y) / 2000$$

where: $Emissions_{x,y}$ = emissions (tons) of pollutant y in county x
$Asphalt\ Usage_x$ = cutback asphalt (barrels) used in county x
EF_y = emission factor for pollutant y

To convert tons of asphalt reported in the *2008 Asphalt Usage Survey* to barrels, it was assumed that the density of asphalt is similar to that of water, 8.34 lbs/gal, and that one barrel equals 42 gallons.

Barrels of Asphalt = (tons of asphalt * 2000 lbs / 8.34 lbs/gal) / 42 gal/barrel

Note that one barrel of asphalt weights approximately 350 pounds.

e. Sample Calculation

VOC emissions from cutback asphalt usage in Autauga County, Alabama:

From the *2008 Asphalt Usage Survey*, the state of Alabama used 1,728 tons of cutback asphalt in 2008. The fraction of paved road VMT traveled in Autauga County is 497 million miles divided by 53,633 million miles which equals 0.0093.

$Asphalt\ Usage_{Autauga}$ = ((1,728 tons * 2000 lbs / 8.34 lbs/gal) / 42 gal/barrel) * 0.0093

$Asphalt\ Usage_{Autauga}$ = 91.41 barrels

$VOC\ Emissions_{Autauga}$ = (91.41 barrels * 88 lbs/barrel) / 2000 lbs/ton

$VOC\ Emissions_{Autauga}$ = 4.022 tons

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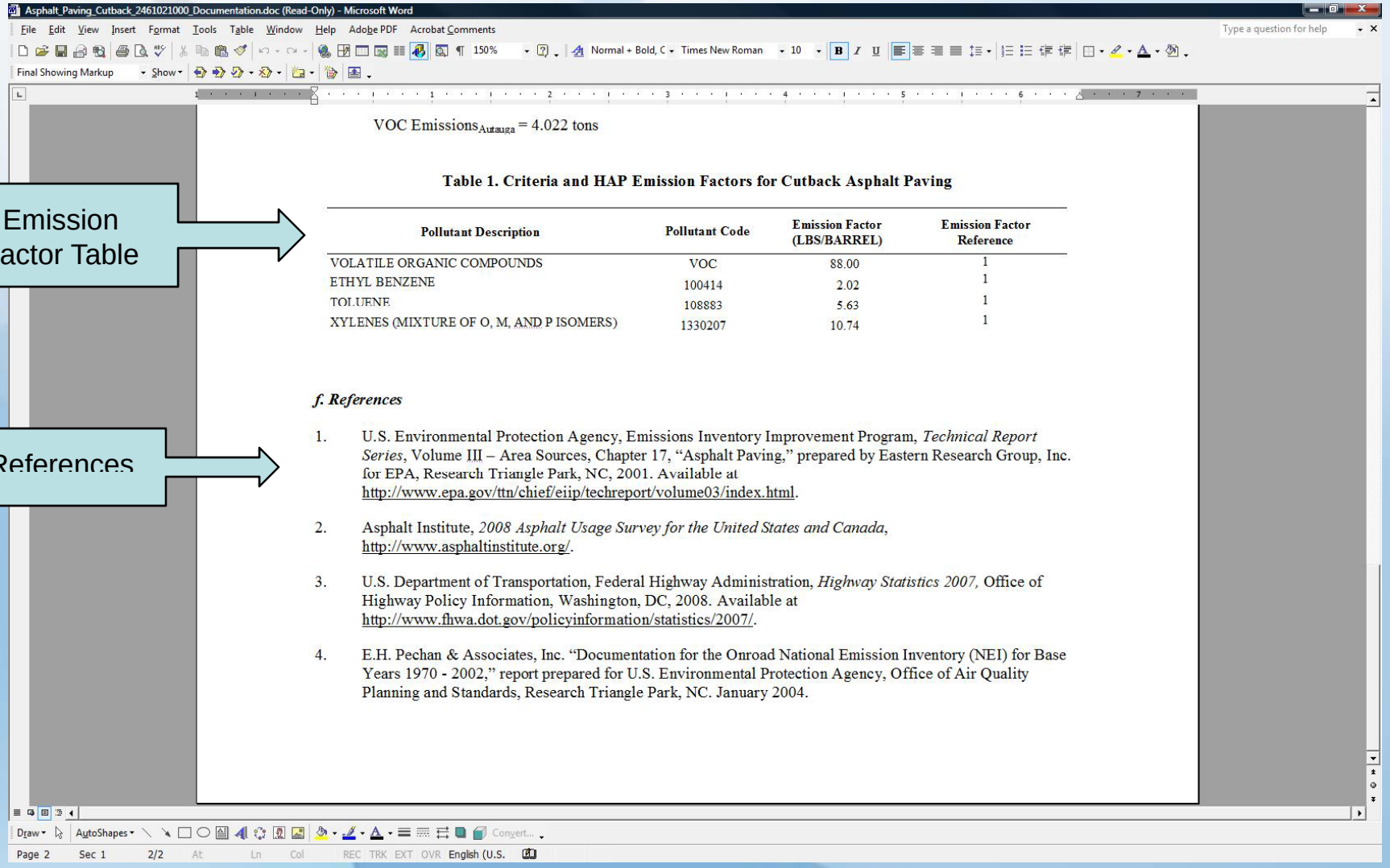
Documentation – EF Table & References



VOC Emissions$_{Autauga}$ = 4.022 tons

Table 1. Criteria and HAP Emission Factors for Cutback Asphalt Paving

Pollutant Description	Pollutant Code	Emission Factor (LBS/BARREL)	Emission Factor Reference
VOLATILE ORGANIC COMPOUNDS	VOC	88.00	1
ETHYL BENZENE	100414	2.02	1
TOLUENE	108883	5.63	1
XYLENES (MIXTURE OF O, M, AND P ISOMERS)	1330207	10.74	1

f. References

1. U.S. Environmental Protection Agency, Emissions Inventory Improvement Program, *Technical Report Series*, Volume III – Area Sources, Chapter 17, "Asphalt Paving," prepared by Eastern Research Group, Inc. for EPA, Research Triangle Park, NC, 2001. Available at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/index.html.

2. Asphalt Institute, *2008 Asphalt Usage Survey for the United States and Canada*, http://www.asphaltinstitute.org/.

3. U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2007,* Office of Highway Policy Information, Washington, DC, 2008. Available at http://www.fhwa.dot.gov/policyinformation/statistics/2007/.

4. E.H. Pechan & Associates, Inc. "Documentation for the Onroad National Emission Inventory (NEI) for Base Years 1970 - 2002," report prepared for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC. January 2004.

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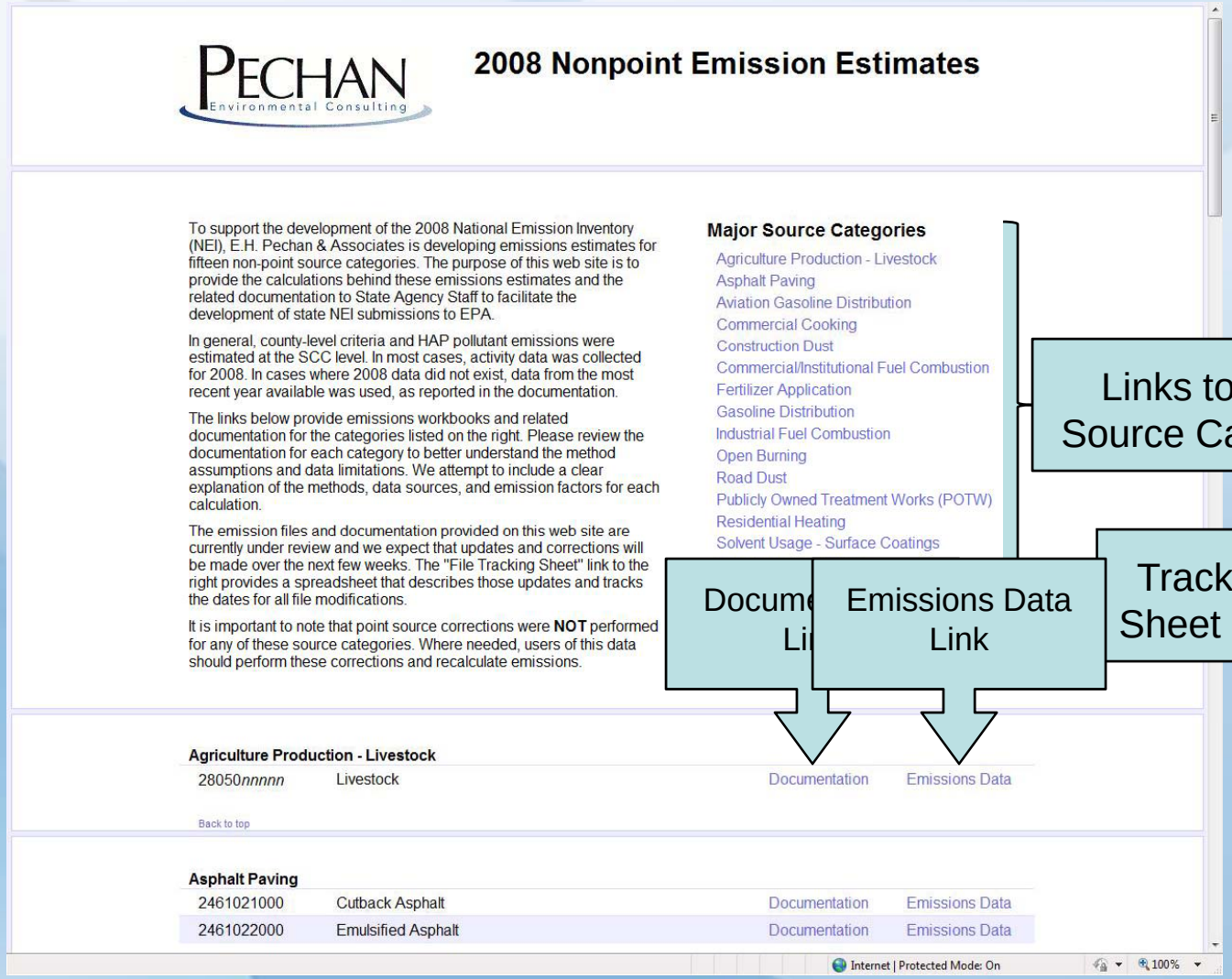
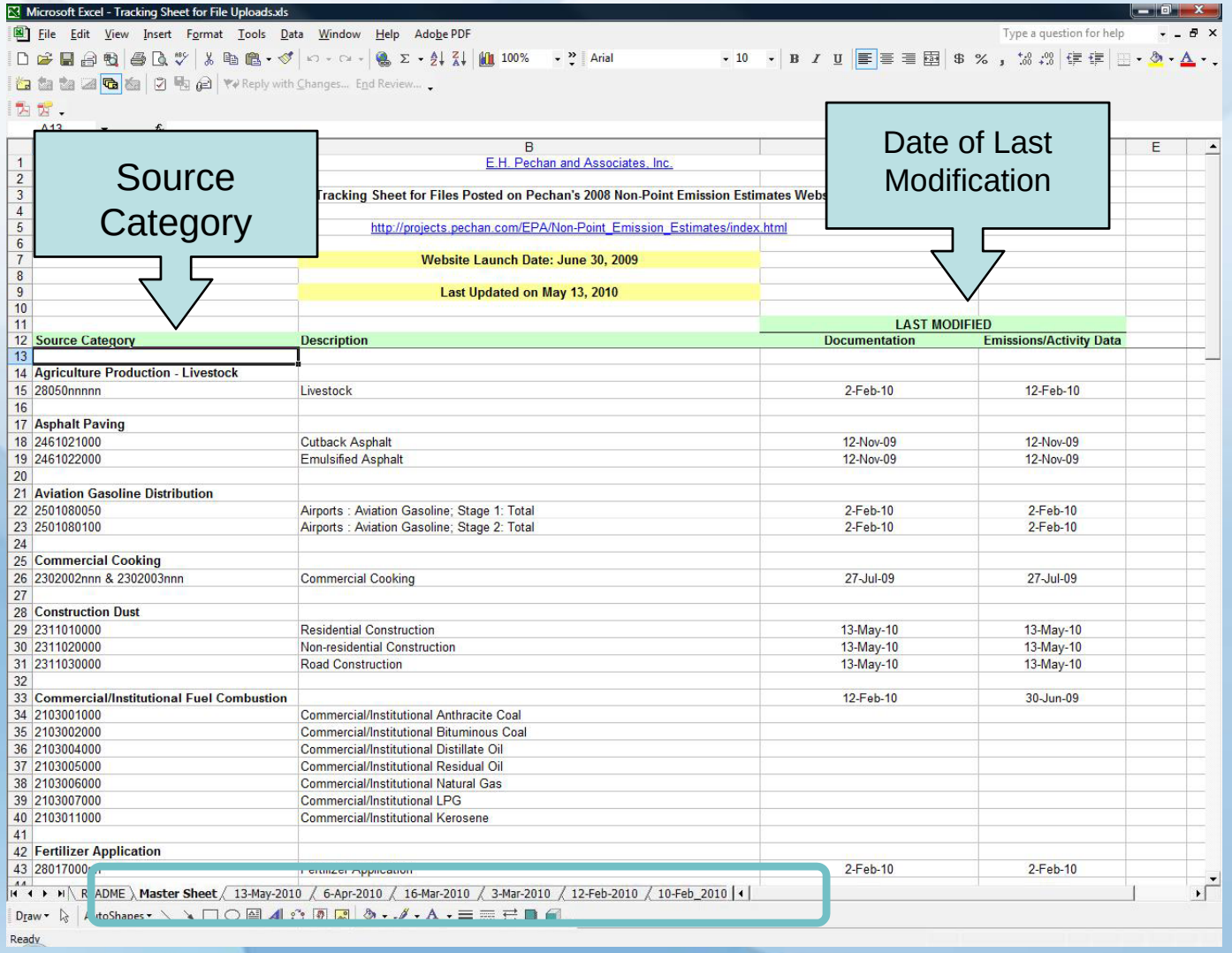
Pechan Nonpoint Website



Tracking Sheet



Microsoft Excel - Tracking Sheet for File Uploads.xls

E.H. Pechan and Associates, Inc.

Tracking Sheet for Files Posted on Pechan's 2008 Non-Point Emission Estimates Webs

http://projects.pechan.com/EPA/Non-Point_Emission_Estimates/index.html

Website Launch Date: June 30, 2009

Last Updated on May 13, 2010

	Source Category	Description	LAST MODIFIED Documentation	LAST MODIFIED Emissions/Activity Data
14	**Agriculture Production - Livestock**			
15	28050nnnnn	Livestock	2-Feb-10	12-Feb-10
16				
17	**Asphalt Paving**			
18	2461021000	Cutback Asphalt	12-Nov-09	12-Nov-09
19	2461022000	Emulsified Asphalt	12-Nov-09	12-Nov-09
20				
21	**Aviation Gasoline Distribution**			
22	2501080050	Airports : Aviation Gasoline; Stage 1: Total	2-Feb-10	2-Feb-10
23	2501080100	Airports : Aviation Gasoline; Stage 2: Total	2-Feb-10	2-Feb-10
24				
25	**Commercial Cooking**			
26	2302002nnn & 2302003nnn	Commercial Cooking	27-Jul-09	27-Jul-09
27				
28	**Construction Dust**			
29	2311010000	Residential Construction	13-May-10	13-May-10
30	2311020000	Non-residential Construction	13-May-10	13-May-10
31	2311030000	Road Construction	13-May-10	13-May-10
32				
33	**Commercial/Institutional Fuel Combustion**		12-Feb-10	30-Jun-09
34	2103001000	Commercial/Institutional Anthracite Coal		
35	2103002000	Commercial/Institutional Bituminous Coal		
36	2103004000	Commercial/Institutional Distillate Oil		
37	2103005000	Commercial/Institutional Residual Oil		
38	2103006000	Commercial/Institutional Natural Gas		
39	2103007000	Commercial/Institutional LPG		
40	2103011000	Commercial/Institutional Kerosene		
41				
42	**Fertilizer Application**			
43	28017000		2-Feb-10	2-Feb-10

README | Master Sheet | 13-May-2010 | 6-Apr-2010 | 16-Mar-2010 | 3-Mar-2010 | 12-Feb-2010 | 10-Feb_2010

Ready

Tracking Sheet

Source Category

Description of Modification

Date of Modification

	A	B	C
1	**Source Category**		**Description of Modification**
2			
3	**Construction Dust**		
4	2311010000	Residential Construction	The documentation stated that a 2,000 square foot area dug to a depth of 8 feet yields 1,600 cubic feet of soil. The correct volume is 16,000 square feet. This error is just a typo and does not affect the emissions calculations. However, the VLOOKUP function in Column H of the County Emissions tab mistakenly referenced the ninth column rather than the 11th column. The error does affect the emissions calculations. Both the documentation and emissions calculation files have been updated to correct for these errors.
5	2311020000	Non-residential Construction	Example calculation inadvertently omitted the duration of construction term. The error does not impact the emissions calculations since the equation in the calculation spreadsheets is correct. The documentation has been corrected to reflect this change.
6	2311030000	Road Construction	Example calculation inadvertently omitted the duration of construction term. The error does not impact the emissions calculations since the equation in the calculation spreadsheets is correct. The documentation has been corrected to reflect this change.
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README | Master Sheet | **13-May-2010** | 6-Apr-2010 | 16-Mar-2010 | 3-Mar-2010 | 12-Feb-2010 | 10-Feb_2010

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Conclusions

- With an effective process that involves stakeholders, a strong base of emission inventory experts can be built at the outset that enables a more productive and well-informed outcome
- The collaborative process can ultimately unlock synergies yielding a timelier and more consistent nonpoint emissions inventory
- The collaboration through ERTAC as well as the development of calculation workbooks, documentation, and the nonpoint source emissions website has begun to lay the foundation for this new process
- The transparency and accessibility of the new process proved successful in stimulating dialogue among stakeholders, ultimately leading to improvements in the 2008 nonpoint source emissions estimates

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Future Improvements

- Involve additional stakeholders, with an emphasis on participation by emission inventory experts from western states

- EPA anticipates creating an additional nonpoint source website to host proposed emission calculation methodologies for comment prior to proceeding with the development of emissions estimates for the default nonpoint NEI

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or

http://projects.pechan.com/EPA/Non-Point_Emission_Estimates/index.html

http://www.epa.gov/ttn/chief/net/2008inventory.html

http://ertac.us/compare/state_comparison_ERTAC_SS_version7.2_23nov2009.xls

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